

1. (Amended) A recording apparatus for forming a color image on a recording material, comprising:

a recording head having a plurality of recording elements;

a recording head driving means for driving the recording elements of said recording head in accordance with image data to form an image on the recording material;

a plurality of supplementing means for effecting supplementations, in different manners, for supplementing defects in a recorded image resulting from a non-operating recording element of said recording elements; and

a control means for selectively operating said plurality of supplementing means depending on a record image to effect the supplementation.

2. (Amended) An apparatus according to Claim 1, wherein said supplementing means comprises a first supplementing means for effecting supplementation for a recording position which is to be recorded by the non-operating recording element with a color which is different from a color of said non-operating recording element.

3. (Amended) An apparatus according to Claim 1, wherein supplementing means comprises a second supplementing means for effecting supplementation for the defect by correcting image data corresponding to a recording element adjacent to the non-operating recording element, on the basis of image data corresponding to the non-operating recording element.

4. (Amended) An apparatus according to Claim 1, wherein said supplementing means comprises:

a first supplementing means for effecting supplementation for a recording position which is to be recorded by the non-operating recording element with a color which is different from a color of said non-operating recording element; and

a second supplementing means for effecting supplementation for the defect by correcting image data corresponding to a recording element adjacent to the non-operating recording element, on the basis of image data corresponding to the non-operating recording element.

5. An apparatus according to Claim 1, wherein said control means selects said supplementing means in accordance with a duty of the image to be recorded.

6. An apparatus according to Claim 1, wherein when the image to be recorded has a high duty, said control means selects said first supplementing means, and when the image to be recorded has a low duty, said control means selects said second supplementing means.

7. (Amended) An apparatus according to Claim 2, wherein said first supplementing means effects a recording with different colors, and effects the recording with the same colors as the non-operating recording elements but with similar lightnesses.

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8. (Amended) An apparatus according to Claim 7, wherein said first supplementing means comprises a correcting means for correcting image data corresponding to the non-operating recording elements in accordance with the color corresponding to the recording element effecting the supplementation, said first supplementing means effects the supplementation on the basis of the image data corrected by said correcting means.

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9. An apparatus according to Claim 3, wherein said second supplementing means corrects an image density indicated by the image data corresponding to the recording element which is adjacent to the non-operating recording element in accordance with the image density indicated by multi-value image data for the non-operating recording element.

10. (Amended) An apparatus according to Claim 1, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

11. (Amended) An apparatus according to Claim 1, wherein said recording head comprises a plurality of nozzles,  
wherein the ink is ejected from said plurality of nozzles by driving the recording element.

12. (Amended) An apparatus according to Claim 11, wherein said recording element comprises an electrothermal transducer for supplying thermal energy to the ink to generate a bubble in the ink.

13. (Amended) A method for forming a color image on a recording material in accordance with image data, using a recording head having a plurality of recording elements, said method comprising:

a step of identifying a non-operating recording element of the plurality of recording elements;

a step of discriminating an image recorded by the recording head;

a step of providing different supplementing manners for supplementing defects in a recorded image resulting from a non-operating recording element of the plurality of recording elements, selecting a supplement manner from the different supplementing manners, and effecting control in accordance with the selected manner; and

a step of effecting recording with supplementation for the non-operating recording element through the selected manner.

14. (Amended) A method according to Claim 13, wherein said supplementing step comprises a first supplementing step of effecting supplementation for a recording position which is to be recorded by the non-operating recording element with a color which is different from a color of said non-operating recording element.

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15. (Amended) A method according to Claim 13, wherein said supplementing step comprises a second supplementing step of effecting supplementation for the defect by correcting image data corresponding to a recording element adjacent to the non-operating recording element, on the basis of image data corresponding to the non-operating recording element.

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16. (Amended) A method according to Claim 13, wherein said step of providing different supplementing manners comprises:

a first supplementing step of effecting supplementation for a recording position which is to be recorded by the non-operating recording element with a color which is different from a color of said non-operating recording element; and

a second supplementing step of effecting supplementation for the defect by correcting image data corresponding to a recording element adjacent to the non-operating recording element, on the basis of image data corresponding to the non-operating recording element.

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17. A method according to Claim 14, wherein said first supplementing step effects recording with different colors, and effects recording with the same colors as the non-operating recording elements but with similar lightnesses.

18. (Amended) A method according to Claim 17, wherein said first supplementing step comprises a correcting step of correcting image data corresponding to the non-operating recording elements in accordance with the color corresponding to the

recording element effecting the supplementation, said first supplementing step effects the supplementation on the basis of the image data corrected by said correcting means.

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19. A method according to Claim 15, wherein said second supplementing step corrects an image density indicated by the image data corresponding to the recording element which is adjacent to the non-operating recording element in accordance with the image density indicated by multi-value image data for the non-operating recording element.

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20. A method according to Claim 16, wherein when the image to be recorded has a high duty, said selecting step selects said first supplementing step, and when the image to be recorded has a low duty, said selecting step selects said second supplementing step.

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21. (Amended) A method according to Claim 13, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

22. A memory medium storing a program for executing said recording method as defined in Claim 13.

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23. (Amended) A recording apparatus for forming a color image on a recording material with different colors, comprising:

a recording head having a plurality of recording elements;

a recording head driving means for driving the recording elements of said recording head in accordance with image data to form an image on the recording material; and

a supplementing means for effecting supplementation recording with a different color of a non-operating recording element and with similar lightnesses, for a recording position which is to be recorded by the non-operating recording element.

24. (Amended) An apparatus according to Claim 23, wherein said supplementing means comprises a correcting means for correcting image data corresponding to the non-operating recording elements in accordance with the color with which the supplementation is to be effected, said supplementing means effects the supplementation on the basis of the image data corrected by said correcting means.

25. (Amended) An apparatus according to Claim 23, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

26. (Amended) An apparatus according to Claim 23, wherein said recording head comprises a plurality of nozzles,  
wherein the ink is ejected from said plurality of nozzles by driving the recording element.

27. (Amended) An apparatus according to Claim 26, wherein said recording element comprises an electrothermal transducer for supplying thermal energy to the ink to generate a bubble in the ink.

28. (Amended) A recording method for forming a color image on a recording material with different colors, using a recording head having a plurality of recording elements, comprising:

a step of identifying a non-operating recording element of the plurality of recording elements;

a step of effecting recording in accordance with image data; and

a step of effecting supplementation recording with a different color of the non-operating recording element and with similar lightnesses, for a recording position which is to be recorded by the non-operating recording element.

29. (Amended) A method according to Claim 28, wherein said supplementing step comprises a correcting step for correcting image data corresponding to the non-operating recording elements in accordance with the color with which the supplementation is to be effected, said supplementing step effects the supplementation on the basis of the image data corrected by said correcting step.

30. (Amended) A method according to Claim 28, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation



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31. (Amended) A method according to Claim 28, wherein said recording head comprises a plurality of nozzles, wherein the ink is ejected from the plurality of nozzles by driving the recording element.

32. (Amended) A method according to Claim 31, wherein said recording element comprises an electrothermal transducer for supplying thermal energy to the ink to generate a bubble in the ink

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33. A memory medium storing a program for executing said recording method as defined in Claim 28.

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34. (Amended) A recording apparatus for forming a color image on a recording material with different colors, comprising:

a recording head having a plurality of recording elements;

a recording head driving means for driving the recording elements of said recording head in accordance with image data to form an image on the recording material; and

a supplementing means for effecting supplementation recording with a recording element for black color recording, for a recording position corresponding to a non-operating recording element among the recording elements for non-black color recording.

35. (Amended) An apparatus according to Claim 34, wherein said supplementing means comprises a correcting means for correcting the image data corresponding to the non-operating recording element in accordance with a color indicated by the image data, and said supplementing means effecting the recording on the basis of the image data corrected by said correcting means.

36. (Amended) An apparatus according to Claim 34, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

37. (Amended) An apparatus according to Claim 34, wherein said recording head comprises a plurality of nozzles,  
wherein the ink is ejected from said plurality of nozzles by driving the recording element.

38. (Amended) An apparatus according to Claim 37, wherein said recording element comprises an electrothermal transducer for supplying thermal energy to the ink to generate a bubble in the ink.

39. (Amended) A recording method for forming a color image on a recording material with different colors, using a recording head having a plurality of recording elements, comprising:

a step of recording an image on the recording material by driving a plurality of recording elements of the recording head in accordance with image data; and

a step of effecting supplementation recording with a recording element for black color recording, for a recording position corresponding to a non-operating recording element among the recording elements for non-black color recording.

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40. (Amended) A method according to Claim 39, wherein said step of effecting supplementation recording comprises a correcting step for correcting the image data corresponding to the non-operating recording element in accordance with a color indicated by the image data, and said step of effecting supplementation recording effects the recording on the basis of the image data corrected by said correcting step.

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41. (Amended) A method according to Claim 39, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

42. (Amended) A method according to Claim 39, wherein said recording head comprises a plurality of nozzles,  
wherein the ink is ejected from the plurality of nozzles by driving the recording element.

43. (Amended) A method according to Claim 42, wherein said recording element comprises an electrothermal transducer for supplying thermal energy to the ink to generate a bubble in the ink.

44. A memory medium storing a program for executing said recording method as defined in Claim 39.

45. (Amended) A recording apparatus for forming a color image on a recording material, comprising:

- a recording head having a plurality of recording elements;
- an inputting means for inputting multi-value image data indicative of an image density;
- a correcting means for correcting image data corresponding to a recording element which is adjacent to a non-operating recording element of said plurality of recording elements;
- a generating means for generating driving data for driving the recording elements corresponding thereto on the basis of the image data corrected by said correcting means; and
- a control means for controlling the recording elements of said recording head in accordance with the driving data thus generated to effect recording.

46. An apparatus according to Claim 45, wherein said correcting means corrects multi-value image data corresponding to the recording element located adjacent to the non-operating recording element.

47. (Amended) An apparatus according to Claim 45, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

48. (Amended) A method for forming a color image on a recording material in accordance with image data, using a recording head having a plurality of recording elements, said method comprising:

a step of inputting multi-value image data indicative of an image density;

a step of identifying a non-recording element of the plurality of the recording elements on the basis of a variation in densities of a test pattern recorded by the recording head;

a step of correcting, on the basis of the variation of the densities, image data corresponding to respective recording elements to raise an image density of the image data for the recording element which is adjacent to the non-operating recording element;

a step of correcting, on the basis of the variation of the densities, image data corresponding to respective recording elements to raise an image density of the

image data for the recording element which is adjacent to the non-operating recording element;

a step of generating driving data for driving the recording elements corresponding thereto on the basis of the image data corrected by said correcting means;

and

a step of controlling the recording elements of the recording head in accordance with the driving data thus generated to effect recording.

49. (Amended) A method according to Claim 48, wherein said correcting step corrects multi-value image data corresponding to the recording element located adjacent to the non-operating recording element.

50. (Amended) A method according to Claim 48, wherein the non-operating recording element comprises a recording element which has become incapable of performing a recording operation.

51. A memory medium storing a program for executing said recording method as defined in Claim 48.